BTEC Assignment Brief

Qualification	Pearson BTEC International Level 3 Subsidiary Diploma in Applied Science Pearson BTEC International Level 3 Foundation Diploma in Applied Science Pearson BTEC International Level 3 Diploma in Applied Science Pearson BTEC International Level 3 Diploma in Environmental Science Pearson BTEC International Level 3 Extended Diploma in Applied Science Pearson BTEC International Level 3 Extended Diploma in Environmental Science
Unit number and title	**Unit 27: Ecosystems**
Learning aim(s)	**C:** Be able to measure populations and species diversity in ecosystems **D:** Understand the effects of disruption to ecosystems
Assignment title	**Measuring and understanding the effects of disruption on populations a species diversity**
Assessor	
Issue date	
Hand in deadline	

Vocational Scenario or Context	The ecology group at your school has been asked to provide a report about the fragility of a nearby ecosystem and the effects of disturbance to it from human and natural activities.

Task	You will **carry out** a population survey of a plant and animal species, and **explain**, **analyse** and **evaluate** the fragility of ecosystems to natural and human disturbances. In conjunction with your tutor, you must identify an ecosystem that is threatened by a human activity e.g. road, housing, school, hospital etc. You must consider what, what survey methods you will use and what equipment you will need to obtain data for analysis and evaluation. Health and safety risk assessments must be in place. You will produce a report which: • Demonstrates that you have **carried out** a population survey of a **named plant** and a **named animal** species. You must collect and present sufficient data to be able to statistically analyse and **evaluate** your data in order to reach conclusions about species diversity and their relative abundance. Your evaluation will need to consider the strengths/weaknesses of your survey methods and how they have impacted on the collection of accurate and reliable data. You will comment on alternative actions you might have taken and their relevance or significance to the results you obtained. For instance, comments on the scheduling of the survey (time of day, time of year), methodology (type(s) of count

	used, mark and recapture, transect, quadrant, kicking methods, tracks and signs, tracking tunnels, relevant legislation) Lincoln-Peterson index will be expected. • **Explains** how disturbances caused by human activity, affects the fragility of ecosystems in general and **evaluates** the impact of **a specific human activity in a named ecosystem.** (This could be in relation to the ecosystem you surveyed or a different one.) Local road or house building, hunting, culling and use of chemicals in agriculture, are some examples that could be evaluated. Primary and/or secondary data will need to be obtained. This will be analysed to identify patterns and trends and draw insightful and justified conclusions about the effects of disruption on the chosen ecosystem. Your report should identify and evaluate strategies that can be used to minimize disruption to the ecosystem. Human activities to be considered could relate to the impact of: o burning of fossil fuels and global warming/climate change o deforestation or other habitat destruction, o hunting, over-fishing o intensive farming, and bioaccumulation and/or eutrophication o plastics and other forms of pollution, o pet trade and traditional medicines. **Analyses and explains** the effect of a specific **natural disaster** on a named species. Research on natural a disaster (e.g. droughts, fire, flood, overgrazing, storms) will need to be carried out to obtain secondary data. Factors that could be considered are: o Frequency o Severity o succession and colonization o invasive species Correct scientific terminology must be used and sources must be referenced.
Checklist of evidence required	A report which: • Provides evidence that a survey of a plant and animal species have been carried out. • Evaluates species diversity in a specific community using survey data. • Explains and evaluates the fragility and impact of disturbance from human activities on a named ecosystem • Explains and analyses the fragility and impact of disturbance from natural activities on a named ecosystem

Criteria covered by this task:	
Unit/Criteria reference	To achieve the criteria, you must show that you are able to:
CD.D3	Evaluate the impact of a specific human activity in a named ecosystem.
C.M3	Evaluate the species diversity and relative abundance in a specific community, using survey data.

D.M4	Analyse the effect of a specific natural disaster on a named species.
C.P5	Carry out a population survey of a named plant species.
C.P6	Carry out a population survey of a named animal species.
D.P7	Explain the fragility of ecosystems and their susceptibility and response to disturbance.
Sources of information to support you with this Assignment	https://www.nature.com/scitable/knowledge/population-ecology-13228167/ http://www.countrysideinfo.co.uk/howto.htm https://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=12&ved=2ahUKEwjhtIz6lcXnAhUSEcAKHRaYBKwQFjALegQIBxAB&url=http%3A%2F%2Fwww2.hawaii.edu%2F~kinzie%2Fdocuments%2F439L%2Flab2.doc&usg=AOvVaw3wHJ_Ve_2i2ap-KaAQ9LDb http://marinesciencetoday.com/2017/03/10/any-ecosystem-is-a-fragile-ecosystem/ https://www.animal-ethics.org/animals-natural-disasters/ https://onekindplanet.org/natural-disasters-affect-animals/
Other assessment materials attached to this Assignment Brief	e.g. work sheets, risk assessments, case study